SUB-CARRIER REJECTION FILTER FL1/514

Introduction

The FL1/514 is used to reduce the level of sub-carrier in a colour television picture signal without significant subjective impairment of the luminance component. The filter has input and output impedances of 75 ohms and incorporates a bypass switch.

The components are mounted on a printed wiring board in a die-cast aluminium box. Input and output connections are made via Musa coaxial plugs and sockets.

General Specification

Input and Output Impedances	75 ohms
Insertion Loss	
4·43 MHz	not less than 23 dB
3·43 MHz and 5·43 MHz	not greater than 3 dB
Length	106 mm ($4\frac{5}{32}$ in.)
Width	60 mm ($2\frac{3}{8}$ in.)
Depth	32 mm ($1\frac{1}{4}$ in.)
Weight	369 g (13 oz)

Circuit Description

The FL1/514, see Fig.1, comprises a parallel resonant section tuned to 4·43 MHz followed by an all-pass constant resistance section. The latter section compensates for group-delay caused by the tuned circuit. The capacitor designated C1, in Fig.1, comprises two separate capacitors chosen to have a total combined capacitance of 780 pF.

Test Procedure

Apparatus Required

Video Oscillator

5·8 MHz low-pass filter, FL4/512

Oscilloscope

625-line pulse-and-bar generator

1. Feed the FL1/514 from the video oscillator via the 5·8 MHz low-pass filter and measure the insertion loss at 4·43 MHz.
2. Adjust the core of inductor L1 to give maximum loss; at least 23 dB.
3. Check that the insertion loss at 3·43 MHz and 5·43 MHz is not greater than 3 dB.
4. Feed a 2T-pulse and bar waveform directly to the filter.
5. Adjust the core of inductor L2 for the best pulse k-rating; not greater than one per cent.

6. Check that the pulse/bar ratio is not less than 95 per cent.

References

1. Designs Department Specification No. 6.114(66).

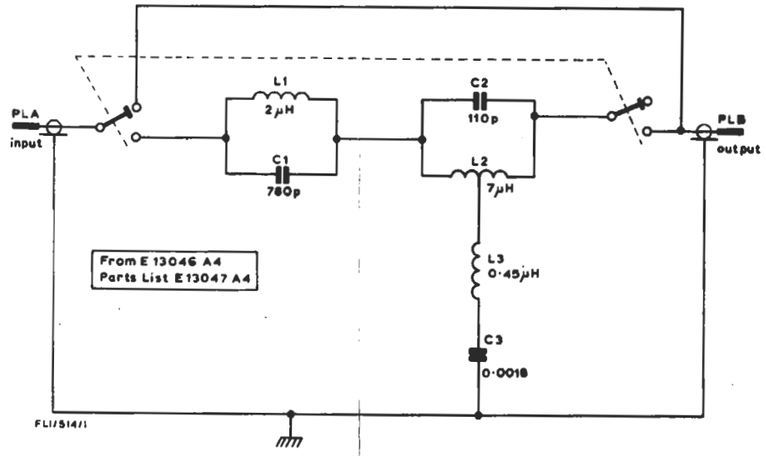

Fig. 1. Circuit Diagram of the FL1/514